

CLAIMS

WE CLAIM:

1. A computer-assisted method for translating a logic module, comprising the steps of:
determining a first interface of a logic module, the first interface having a first one
5 or more interface element names; and
generating a second interface of the logic module, the second interface having a
second one or more interface element names;
wherein the generating step comprises renaming the first one or more interface
element names to produce the second one or more interface element names.
10
2. The method of Claim 1, wherein the renaming step comprises generating one or more
random strings as the second one or more interface element names.
3. The method of Claim 1, wherein the renaming step comprises hashing the first one or
15 more interface element names.
4. The method of Claim 1, wherein the renaming step comprises adding an offset to the
first one or more interface element names.
- 20 5. The method of Claim 1, wherein the generating step further comprises adding one or
more dummy interface elements to the second interface.

6. The method of Claim 5, wherein the generating step further comprises associating one or more traps with the one or more dummy interface elements.

7. The method of Claim 1, wherein the logic module comprises an operating system and
5 the first interface comprises a set of system calls of the operating system.

8. A computer-assisted method for translating a user module, comprising the steps of:

determining a first user module and a translation, the translation mapping a first
provider interface to a second provider interface; and

10 generating a second user module according to the translation;

wherein the generating step comprises replacing a first reference in the first user
module to an element in the first interface with a second reference to an element in the
second interface according to the translation.

15 9. The method of Claim 8, wherein the first provider interface comprises a set of system
calls of an operating system, the second provider interface comprises a translated set of
system calls of the operating system, the first user module comprises a software
application referencing the first provider interface, and the second user module comprises
a translated software application referencing the second provider interface.

20

10. A computer operating system, comprising:

a first set of one or more system calls for disclosing to trusted software modules;

and

Damage Containment By Translation

Solid-P002

a second set of one or more dummy systems calls for trapping untrusted software modules.

11. A software program for running on an operating system, the operating system having
5 a translated system call interface, the translated system call interface comprising a first set of translated system call names for disclosing to trusted parties, the translated system call interface further comprising a second set of dummy system call names or untranslated system call names for trapping untrusted parties, the software program comprising:

10 a set of one or more instructions;

wherein the set of one or more instructions comprises one or more references to the first set of translated system call names.

12. A shared software library, comprising:

15 a first set of one or more library functions for disclosing to trusted software modules; and

a second set of one or more dummy library functions for trapping untrusted software modules.

20 13. A hardware processing system, comprising:

a processor; and

a translation table;

wherein the processor fetches an instruction, decodes the instruction according to a translation stored in the translation table, and executes the decoded instruction.

14. A method for generating a web page, comprising the steps of:

- 5 receiving a web page request having a first URL;
- translating the first URL to a second URL according to a URL translation table,
- the second URL indicating a first web page, the first web page having a third one or more embedded URLs; and
- generating a second web page;
- 10 wherein the generating step comprises replacing the third one or more embedded URLs with translated versions of said third one or more embedded URLs according to the URL translation table to obtain the second web page.

15. A method for processing a file access request, comprising the steps of:

- 15 receiving a file access request having a first string; and
- translating the first string to a second string, the second string indicating a file name;
- wherein the translating step proceeds according to a file name translation table.

20 16. A method for providing access to a file system, comprising the steps of:

- receiving a file access request; and
- processing the request;

wherein the file access request comprises a file name and a first file name extension, the processing step comprises translating the first file name extension to obtain a second file name extension and providing access to a file indicated by the file name and the second file name extension.

5

17. A method for processing a network connection request, comprising the steps of:

receiving a network connection request having a first number; and

translating the first number to a second number, the second number indicating a port number;

10 wherein the translating step proceeds according to a port number translation table.

18. A method for processing a network packet, comprising the steps of:

receiving a network packet, the network packet comprising a protocol type field having a first protocol type identifier;

15 translating the first protocol type identifier to a second protocol type identifier; and

routing the network packet according to a protocol indicated by the second protocol type identifier;

20 wherein the translating step proceeds according to a protocol type field translation table.

19. A method for processing a database command, comprising the steps of:

receiving a database command having a first string; and

translating the first string to a second string, the second string indicating a database keyword;

wherein the translating step proceeds according to a database keyword translation table.

5